

Hit List

[First Hit](#) [Clear](#) [Generate Collection](#) [Print](#) [Fwd Refs](#) [Bkwd Refs](#)
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Search Results - Record(s) 1 through 1 of 1 returned.

1. Document ID: US 20040170445 A1

Using default format because multiple data bases are involved.

L85: Entry 1 of 1

File: PGPB

Sep 2, 2004

PGPUB-DOCUMENT-NUMBER: 20040170445

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040170445 A1

TITLE: Systems and methods for toner cartridge conversion

PUBLICATION-DATE: September 2, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Moore, Darin L.	Morrisville	NC	US
Daniels, Matthew P.	Pittsboro	NC	US

US-CL-CURRENT: 399/109

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequencies](#) [Attachments](#) [Claims](#) [KMC](#) [Draw](#) [D](#)

[Clear](#) [Generate Collection](#) [Print](#) [Fwd Refs](#) [Bkwd Refs](#) [Generate OACS](#)

Term	Documents
SHUTTER	194313
SHUTTERS	38114
APERATURE	7147
APERATURES	3196
IRIS	37957
IRI	273935
ARM	1526675
ARMS	915755
SUPPORT	3637495
SUPPORTS	1241190
FIN	207062

(L84 AND ((SHUTTER OR SHIELD\$3 OR APERATURE
OR IRIS) WITH (ARM OR SUPPORT OR FIN OR
CHIP))).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.

1

There are more results than shown above. Click here to view the entire set.

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[Previous Page](#)

[Next Page](#)

[Go to Doc#](#)



Application Number **SEARCH**

IDS Flag Clearance for Application

IDS Information

Content	Mailroom Date	Entry Number	IDS Review	Reviewer
M844	12-15-2005	16	<input checked="" type="checkbox"/>	12-23-2005 11:22:51 ssurles

UPDATE

WEST Search History

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DATE: Tuesday, February 28, 2006

Hide?	Set Name	Query	Hit Count
		<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L85	L84 and ((shutter or shield\$3 or aperature or iris) with (arm or support or fin or chip))	1
<input type="checkbox"/>	L84	L72 and ((drum) with (cover\$4 or shutter or shield\$3) with ((waste or ((used or old or used-up or empty) with toner) or trash or rubbish) with (bin or receptacle or contain\$4 or collection or collect\$3 or device)))	2
<input type="checkbox"/>	L83	L79 and ((drum) with (cover\$4 or shutter or shield\$3) with ((waste or ((used or old or used-up or empty) with toner) or trash or rubbish) with (bin or receptacle or contain\$4 or collection or collect\$3 or device)))	1
<input type="checkbox"/>	L82	L80 and ((drum) with (cover\$4 or shutter or shield\$3) with ((waste or ((used or old or used-up or empty) with toner) or trash or rubbish) with (bin or receptacle or contain\$4 or collection or collect\$3 or device)))	1
<input type="checkbox"/>	L81	L80 and ((drum) with (cover\$4 or shutter or shield\$3))	4
<input type="checkbox"/>	L80	L79 and ((reus\$3 or recycl\$3 or convert\$3 or conversion or insert\$4 or modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or remanufactur\$4 or recondition\$4) with ((toner) with (cartridge)) with (different or another or second) with (type or kind or model\$3 or device or system or apparatus))	5
<input type="checkbox"/>	L79	L72 and ((remov\$4 or modify\$3 or reus\$3 or recycl\$4 or convert\$3 or conversion or insert\$4 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or remanufactur\$4 or recondition\$4) with ((shutter or shield\$3 or aperature or iris) with (arm or support or fin or chip)))	13
<input type="checkbox"/>	L78	L77 and ((reus\$3 or recycl\$3 or convert\$3 or conversion or insert\$4 or modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or remanufactur\$4 or recondition\$4) with ((toner) with (cartridge)) with (different or another or second) with (type or kind or model\$3 or device or system or apparatus))	5
<input type="checkbox"/>	L77	L72 and ((remov\$4 or modify\$3 or reus\$3 or recycl\$4 or convert\$3 or conversion or insert\$4 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or remanufactur\$4 or recondition\$4) with ((shutter or shield\$3 or aperature or iris) with (arm or support or chip)))	13
<input type="checkbox"/>	L76	L75 and ((reus\$3 or recycl\$3 or convert\$3 or conversion or insert\$4 or modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or remanufactur\$4 or recondition\$4) with ((toner) with (cartridge)) with (different or another or second) with (type or kind or model\$3 or device or system or apparatus))	5
<input type="checkbox"/>	L75	L72 and ((remov\$4 or modify\$3 or reus\$3 or recycl\$4 or convert\$3 or conversion or insert\$4 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 and remanufactur\$4 or recondition\$4) with	13

	((shutter or shield\$3 or aperature or iris) with (arm or support or chip)))	
□	L73 and ((remov\$4 or modify\$3 or recycl\$4 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 and remanufactur\$4 or recondition\$4) with ((shutter or shield\$3 or aperature or iris) with (arm or support or chip)))	1
□	L72 and ((reus\$3 or recycl\$3 or convert\$3 or conversion or insert\$4) with ((toner) with (cartridge)) with (different or another or second) with (type or kind or model\$3 or device or system or apparatus))	2
□	L72 399/109.ccls.	175
□	L70 and ((reus\$3 or recycl\$3 or convert\$3 or conversion or insert\$4) with ((toner) with (cartridge)) with (different or another or second) with (type or kind or model\$3 or device or system or apparatus))	1
□	L69 and ((drum or shutter or cover or shield\$4) with (arm or support or projection))	8
□	L68 and ((modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or recycl\$4) with ((toner) with (cartridge)))	9
□	L68 L67 and ((toner) with (cartridge))	30
□	L3 and ((remov\$4 or modify\$3 or recycl\$4 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 and remanufactur\$4 or recondition\$4) with ((shutter or shield\$3 or aperature or iris) with (arm or support or chip)))	38
□	L66 L3 and ((remov\$4 or modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 and remanufactur\$4 or recondition\$4) with ((shutter or shield\$3 or aperature or iris) with (arm or support or chip)))	38
□	L65 L64 and ((drum or shutter or cover or shield\$4) with (arm or support or projection))	0
□	L64 20040114959	2
□	L63 L62 and ((drum or shutter or cover or shield\$4) with (arm or support or projection))	1
□	L62 L61 and ((toner) with (cartridge))	10
□	L61 L60 and (matthew.in.)	1065
□	L60 ("daniels".in.)	119263
□	L59 L58 and ((toner) with (cartridge))	9
□	L58 L57 and ((drum or shutter or cover or shield\$4) with (arm or support or projection))	67
□	L56 L56 and ((waste or ((used or old or used-up or empty) with toner) or trash or rubbish) with (bin or receptacle or contain\$4 or collection or collect\$3 or device or reservoir))	1518
□	L56 (daniels.in.)	119263
□	L55 ((reus\$3 or recycl\$3 or convert\$3 or conversion) with ((toner) with (cartridge)) with (different or another) with (type or kind or model\$3))	5
□	L54 L53 and (model\$3)	7
□	L53 L52 and ((waste or ((used or old or used-up or empty) with toner) or trash or rubbish) with (bin or receptacle or contain\$4 or collection or collect\$3 or device or reservoir))	97

	or reservoir))	
<input type="checkbox"/>	L52 L51 and ((drum or shutter or cover or shield\$4) with (arm or support or projection))	137
<input type="checkbox"/>	L51 L50 and (arm or support or projection)	158
<input type="checkbox"/>	L50 L49 and (operat\$3 or operation\$4 or function\$4 or work\$4) L48 and ((modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or remanufactur\$4 or recondition\$4 or conver\$4 or convert\$3) with ((toner) with (cartridge)))	191
<input type="checkbox"/>	L48 L47 and ((toner) with (cartridge))	1151
<input type="checkbox"/>	L47 ((drum) with (cover\$4 or shutter or shield\$3))	39882
<input type="checkbox"/>	L46 L45 and (jig)	5
<input type="checkbox"/>	L45 L44 and (((toner) with (cartridge)) with ((drum) with (cover\$4 or shutter or shield\$3)))	22
<input type="checkbox"/>	L44 L43 and ((remov\$4 or cut\$4) with (cover\$4 or shutter or shield\$3 or arm or support))	135
<input type="checkbox"/>	L43 L42 and ((drum) with (cover\$4 or shutter or shield\$3)) L41 and ((waste or ((used or old or used-up or empty) with toner) or trash or rubbish) with (bin or receptacle or contain\$4 or collection or collect\$3 or device or reservoir))	181
<input type="checkbox"/>	L42 L41 and (toner)	603
<input type="checkbox"/>	L40 ((cartridge) with (recycl\$4 or conver\$4 or refurbish\$4 or remanufactur\$4))	8071
<input type="checkbox"/>	L39 L38 and ((drum) with (cover\$4 or shutter or shield\$3)) L37 and ((modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or remanufactur\$4 or recondition\$4) with ((toner) with (cartridge)) with(operat\$4 or function\$4 or work\$4) with (first or primary or initial or type or kind) with (second or secondary or another or type or kind))	3
<input type="checkbox"/>	L38 L36 and ((modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or remanufactur\$4 or recondition\$4) with ((toner) with (cartridge)) with(operat\$4 or function\$4 or work\$4) with (first or primary or initial or type or kind))	30
<input type="checkbox"/>	L37 L35 and ((modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or remanufactur\$4 or recondition\$4) with ((toner) with (cartridge)) with(operat\$4 or function\$4 or work\$4) with (first or primary or initial or type or kind))	46
<input type="checkbox"/>	L36 L35 and ((modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or remanufactur\$4 or recondition\$4) with ((toner) with (cartridge)) with(operat\$4 or function\$4 or work\$4))	190
<input type="checkbox"/>	L35 L34 and (first or primary or initial or second or secondary or another or type or kind)	992
<input type="checkbox"/>	L34 L33 and (first or primary or initial or system or device or apparatus on instrument or printer or copier or xerograp\$4)	1053
<input type="checkbox"/>	L33 L31 and (operat\$3 or operation\$4 or function\$3 or functional or work\$4)	1063
<input type="checkbox"/>	L32 L31 and (operat\$4 or function\$4 or work\$4) ((modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or remanufactur\$4 or recondition\$4) with ((toner) with (cartridge)))	1061
<input type="checkbox"/>	L31 L29 and (jig)	1329
<input type="checkbox"/>		12

<input type="checkbox"/>	L29	L28 and ((remov\$4 or cut\$4) with (cover\$4 or shutter or shield\$3 or arm or support))	97
<input type="checkbox"/>	L28	L26 and (remov\$4 or cut\$4)	128
<input type="checkbox"/>	L27	L26 and ((mount\$4 or attach\$4 or secur\$3) with (chip))	5
<input type="checkbox"/>	L26	L25 and ((drum) with (cover\$4 or shutter or shield\$3))	129
		L17 and ((waste or ((used or old or used-up or empty) with toner) or trash or rubbish) with (bin or receptacle or contain\$4 or collection or collect\$3 or device))	
<input type="checkbox"/>	L25	L20 and((mount\$4 or attach\$4 or secur\$3) with (chip))	461
<input type="checkbox"/>	L24	L20 and((mount\$4 or attach\$4 or secur\$3) with (chip))	4
<input type="checkbox"/>	L23	L22 and((mount\$4 or attach\$4 or secur\$3) with (chip))	2
<input type="checkbox"/>	L22	L21 and (jig)	6
<input type="checkbox"/>	L21	L20 and (patch\$4 or cover\$4 or fill\$3)	42
<input type="checkbox"/>	L20	L19 and (remov\$4 or hole or mount\$4 or cut\$4 or attach\$4)	43
		L18 and ((waste or ((used or old or used-up or empty) with toner) or trash or rubbish) with (bin or receptacle or contain\$4 or collection or collect\$3 or device))	
<input type="checkbox"/>	L19	L17 and ((shutter or shield\$3 or aperature or iris) with (arm or support or chip))	43
<input type="checkbox"/>	L18	L16 and (drum)	772
		L15 and ((modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or remanufactur\$4 or recondition\$4) with ((toner) with (cartridge)))	
<input type="checkbox"/>	L16	L2 and (modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or remanufactur\$4 or recondition\$4)	1329
<input type="checkbox"/>	L15	L2 and (modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 or remanufactur\$4 or recondition\$4)	11244
<input type="checkbox"/>	L14	L2 and (modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 and remanufactur\$4 or recondition\$4)	10004
<input type="checkbox"/>	L13	L12 and (jig or cutter)	1
<input type="checkbox"/>	L12	L11 and ((shutter or shield\$3 or aperature or iris) with (arm or support or chip))	23
<input type="checkbox"/>	L11	L10 and (arm or support or chip)	78
<input type="checkbox"/>	L10	L8 and ((drum) with (shutter or shield\$3 or aperature or iris))	94
<input type="checkbox"/>	L9	L8 and (shutter or shield\$3 or aperature or iris)	195
<input type="checkbox"/>	L8	L7 and (drum)	576
<input type="checkbox"/>	L7	L6 and (bin or receptacle or contain\$4 or collection or collect\$3 or device)	814
<input type="checkbox"/>	L6	L5 and ((waste or ((used or old or used-up or empty) with toner) or trash or rubbish) with (bin or receptacle or contain\$4 or collection or collect\$3 or device))	848
		L4 and ((modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4 with ((toner) with (cartridge))))	
<input type="checkbox"/>	L5	L3 and ((toner) with (cartridge))	1201
<input type="checkbox"/>	L4	L2 and (modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4)	7256
<input type="checkbox"/>	L3	L2 and (modify\$3 or modifi\$4 or modification or refurbish\$4 of alter\$3 or adapt\$4 or adjust\$3 or chang\$4)	11186
<input type="checkbox"/>	L2	L1 and (cartridge)	21031
<input type="checkbox"/>	L1	(toner)	223770

Hit List

Search Results - Record(s) 1 through 1 of 1 returned.

1. Document ID: US 20040170445 A1

Using default format because multiple data bases are involved.

L74: Entry 1 of 1

File: PGPB

Sep 2, 2004

PGPUB-DOCUMENT-NUMBER: 20040170445

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040170445 A1

TITLE: Systems and methods for toner cartridge conversion

PUBLICATION-DATE: September 2, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Moore, Darin L.	Morrisville	NC	US
Daniels, Matthew P.	Pittsboro	NC	US

US-CL-CURRENT: 399/109

Term	Documents
MODIFICATION	990018
MODIFICATIONS	2499660
OF	756632
OFS	3244
SHUTTER	194313
SHUTTERS	38114
APERATURE	7147
APERATURES	3196
IRIS	37957
IRI	273935
ARM	1526675

(L73 AND ((REMOV\$4 OR MODIFY\$3 OR RECYCL\$4 OR MODIFI\$4 OR MODIFICATION OR REFURBISH\$4 OF ALTER\$3 OR ADAPT\$4 OR ADJUST\$3 OR CHANG\$4 AND REMANUFACTUR\$4 OR RECONDITION\$4) WITH ((SHUTTER OR SHIELD\$3 OR APERATURE OR IRIS) WITH (ARM OR SUPPORT OR CHIP)))).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.

1

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Display Format:

[Change Format](#)

[Previous Page](#)

[Next Page](#)

[Go to Doc#](#)

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[First Hit](#) [Clear](#) [Generate Collection](#) [Print](#) [Fwd Refs](#) [Bkwd Refs](#)
[Generate OACs](#)

Search Results - Record(s) 1 through 13 of 13 returned.

1. Document ID: US 20050135836 A1

Using default format because multiple data bases are involved.

L75: Entry 1 of 13

File: PGPB

Jun 23, 2005

PGPUB-DOCUMENT-NUMBER: 20050135836

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050135836 A1

TITLE: Methods for printer cartridge conversion

PUBLICATION-DATE: June 23, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Rogers, Justin Lee	Sanford	NC	US
Jones, James H.	Fayetteville	NC	US

US-CL-CURRENT: 399/109

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#) [Claims](#) [KINIC](#) [Drawings](#)

2. Document ID: US 20040170445 A1

L75: Entry 2 of 13

File: PGPB

Sep 2, 2004

PGPUB-DOCUMENT-NUMBER: 20040170445

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040170445 A1

TITLE: Systems and methods for toner cartridge conversion

PUBLICATION-DATE: September 2, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Moore, Darin L.	Morrisville	NC	US
Daniels, Matthew P.	Pittsboro	NC	US

US-CL-CURRENT: 399/109

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#) [Claims](#) [KINIC](#) [Drawings](#)

3. Document ID: US 20040105698 A1

L75: Entry 3 of 13

File: PGPB

Jun 3, 2004

PGPUB-DOCUMENT-NUMBER: 20040105698

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040105698 A1

TITLE: Process cartridge remanufacturing method

PUBLICATION-DATE: June 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Yamaguchi, Koji	Numazu-shi		JP
Mori, Tomonori	Numazu-shi		JP
Yoshino, Yasufumi	Numazu-shi		JP

US-CL-CURRENT: 399/109; 399/343[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#) [Claims](#) [KMC](#) [Draw](#) 4. Document ID: US 20020159787 A1

L75: Entry 4 of 13

File: PGPB

Oct 31, 2002

PGPUB-DOCUMENT-NUMBER: 20020159787

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020159787 A1

TITLE: Process cartridge remanufacturing method

PUBLICATION-DATE: October 31, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Chadani, Kazuo	Shizuoka-ken		JP
Matsuzaki, Hiroomi	Mishima-shi		JP
Miyabe, Shigeo	Numazu-shi		JP
Suzuki, Akira	Odawara-shi		JP

US-CL-CURRENT: 399/109[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#) [Claims](#) [KMC](#) [Draw](#) 5. Document ID: US 20010041080 A1

L75: Entry 5 of 13

File: PGPB

Nov 15, 2001

PGPUB-DOCUMENT-NUMBER: 20010041080
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20010041080 A1

TITLE: Remanufacturing method of process cartridge

PUBLICATION-DATE: November 15, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Higeta, Akira	Funabashi-shi		JP
Yasuda, Satoshi	Tokyo		JP
Kakumi, Yoshiyuki	Tuchiura-shi		JP

US-CL-CURRENT: 399/103; 399/109, 399/113

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [References](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [TOC](#) | [Drawings](#)

6. Document ID: US 20010036373 A1

L75: Entry 6 of 13

File: PGPB

Nov 1, 2001

PGPUB-DOCUMENT-NUMBER: 20010036373
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20010036373 A1

TITLE: Remanufacturing method of process cartridge

PUBLICATION-DATE: November 1, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Higeta, Akira	Funabashi-shi		JP
Yasuda, Satoshi	Tokyo		JP
Kakumi, Yoshiyuki	Tuchiura-shi		JP

US-CL-CURRENT: 399/109; 399/103

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [References](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [TOC](#) | [Drawings](#)

7. Document ID: US 6931226 B2

L75: Entry 7 of 13

File: USPT

Aug 16, 2005

US-PAT-NO: 6931226
DOCUMENT-IDENTIFIER: US 6931226 B2

TITLE: Process cartridge remanufacturing method

DATE-ISSUED: August 16, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Chadani; Kazuo	Shizuoka-ken			JP
Matsuzaki; Hiroomi	Mishima			JP
Miyabe; Shigeo	Numazu			JP
Suzuki; Akira	Odawara			JP

US-CL-CURRENT: 399/109

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Image] [Kill] [Draw]

8. Document ID: US 6915092 B2

L75: Entry 8 of 13

File: USPT

Jul 5, 2005

US-PAT-NO: 6915092

DOCUMENT-IDENTIFIER: US 6915092 B2

TITLE: Process cartridge remanufacturing method

DATE-ISSUED: July 5, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yamaguchi; Koji	Numazu			JP
Mori; Tomonori	Numazu			JP
Yoshino; Yasufumi	Numazu			JP

US-CL-CURRENT: 399/109; 399/111

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Image] [Kill] [Draw]

9. Document ID: US 6577829 B2

L75: Entry 9 of 13

File: USPT

Jun 10, 2003

US-PAT-NO: 6577829

DOCUMENT-IDENTIFIER: US 6577829 B2

** See image for Certificate of Correction **

TITLE: REMANUFACTURING METHOD FOR A PROCESS CARTRIDGE HAVING A TONER SEAL THAT IS UNSEALED UPON THE START OF USE OF THE CARTRIDGE COMPRISING THE STEPS OF SEPARATING FIRST AND SECOND UNITS OF THE CARTRIDGE AND RECOUPLING THE UNITS WITHOUT REMOUNTING THE TONER SEAL

DATE-ISSUED: June 10, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Higeta; Akira	Funabashi			JP
Yasuda; Satoshi	Tokyo			JP
Kakumi; Yoshiyuki	Tuchiura			JP

US-CL-CURRENT: 399/109

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KWM](#) | [Drawn](#)

10. Document ID: US 6574445 B2

L75: Entry 10 of 13

File: USPT

Jun 3, 2003

US-PAT-NO: 6574445

DOCUMENT-IDENTIFIER: US 6574445 B2

** See image for Certificate of Correction **

TITLE: Method of remanufacturing process cartridge including additional seal mounting step

DATE-ISSUED: June 3, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Higeta; Akira	Funabashi			JP
Yasuda; Satoshi	Tokyo			JP
Kakumi; Yoshiyuki	Tuchiura			JP

US-CL-CURRENT: 399/103; 399/109

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KWM](#) | [Drawn](#)

11. Document ID: US 6381430 B1

L75: Entry 11 of 13

File: USPT

Apr 30, 2002

US-PAT-NO: 6381430

DOCUMENT-IDENTIFIER: US 6381430 B1

TITLE: Assembling and disassembling methods for developing cartridge

DATE-ISSUED: April 30, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yokomori; Kanji	Odawara			JP
Kanno; Kazuhiko	Odawara			JP
Kawai; Tachio	Odawara			JP

US-CL-CURRENT: 399/119; 399/109

[Full] [Title] [Citation] [Print] [Review] [Classification] [Date] [References] [Claims] [DNC] [Generate OACS]

12. Document ID: US 6029031 A

L75: Entry 12 of 13

File: USPT

Feb 22, 2000

US-PAT-NO: 6029031

DOCUMENT-IDENTIFIER: US 6029031 A

** See image for Certificate of Correction **

TITLE: Process cartridge and remanufacturing method

DATE-ISSUED: February 22, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yokomori; Kanji	Odawara			JP
Nomura; Yoshiya	Toride			JP
Miyabe; Shigeo	Numazu			JP

US-CL-CURRENT: 399/109; 399/113

[Full] [Title] [Citation] [Print] [Review] [Classification] [Date] [References] [Claims] [DNC] [Generate OACS]

13. Document ID: US 5839028 A

L75: Entry 13 of 13

File: USPT

Nov 17, 1998

US-PAT-NO: 5839028

DOCUMENT-IDENTIFIER: US 5839028 A

** See image for Certificate of Correction **

TITLE: Process cartridge and refilling method therefor

DATE-ISSUED: November 17, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nomura; Yoshiya	Toride			JP
Yokomori; Kanji	Odawara			JP
Miyabe; Shigeo	Numazu			JP

US-CL-CURRENT: 399/109; 141/18

[Full] [Title] [Citation] [Print] [Review] [Classification] [Date] [References] [Claims] [DNC] [Generate OACS]

[Clear] [Generate Collection] [Print] [Fwd Refs] [Bkwd Refs] [Generate OACS]

Term	Documents
CONVERSION	1005534
CONVERSIONS	59458
MODIFICATION	990018
MODIFICATIONS	2499660
OF	756632
OFS	3244
SHUTTER	194313
SHUTTERS	38114
APERATURE	7147
APERATURES	3196
IRIS	37957
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Search Results - Record(s) 1 through 5 of 5 returned.

1. Document ID: US 20050135836 A1

Using default format because multiple data bases are involved.

L78: Entry 1 of 5

File: PGPB

Jun 23, 2005

PGPUB-DOCUMENT-NUMBER: 20050135836

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050135836 A1

TITLE: Methods for printer cartridge conversion

PUBLICATION-DATE: June 23, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Rogers, Justin Lee	Sanford	NC	US
Jones, James H.	Fayetteville	NC	US

US-CL-CURRENT: 399/109

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Draw](#) | [D](#)

2. Document ID: US 20040170445 A1

L78: Entry 2 of 5

File: PGPB

Sep 2, 2004

PGPUB-DOCUMENT-NUMBER: 20040170445

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040170445 A1

TITLE: Systems and methods for toner cartridge conversion

PUBLICATION-DATE: September 2, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Moore, Darin L.	Morrisville	NC	US
Daniels, Matthew P.	Pittsboro	NC	US

US-CL-CURRENT: 399/109

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Draw](#) | [D](#)

3. Document ID: US 20010041080 A1

L78: Entry 3 of 5

File: PGPB

Nov 15, 2001

PGPUB-DOCUMENT-NUMBER: 20010041080

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010041080 A1

TITLE: Remanufacturing method of process cartridge

PUBLICATION-DATE: November 15, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Higeta, Akira	Funabashi-shi		JP
Yasuda, Satoshi	Tokyo		JP
Kakumi, Yoshiyuki	Tuchiura-shi		JP

US-CL-CURRENT: 399/103; 399/109, 399/113[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#) [Claims](#) [KMC](#) [Drawings](#) 4. Document ID: US 20010036373 A1

L78: Entry 4 of 5

File: PGPB

Nov 1, 2001

PGPUB-DOCUMENT-NUMBER: 20010036373

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010036373 A1

TITLE: Remanufacturing method of process cartridge

PUBLICATION-DATE: November 1, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Higeta, Akira	Funabashi-shi		JP
Yasuda, Satoshi	Tokyo		JP
Kakumi, Yoshiyuki	Tuchiura-shi		JP

US-CL-CURRENT: 399/109; 399/103[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#) [Claims](#) [KMC](#) [Drawings](#) 5. Document ID: US 6577829 B2

L78: Entry 5 of 5

File: USPT

Jun 10, 2003

US-PAT-NO: 6577829

DOCUMENT-IDENTIFIER: US 6577829 B2

** See image for Certificate of Correction **

TITLE: REMANUFACTURING METHOD FOR A PROCESS CARTRIDGE HAVING A TONER SEAL THAT IS UNSEALED UPON THE START OF USE OF THE CARTRIDGE COMPRISING THE STEPS OF SEPARATING FIRST AND SECOND UNITS OF THE CARTRIDGE AND RECOUPLING THE UNITS WITHOUT REMOUNTING THE TONER SEAL

DATE-ISSUED: June 10, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Higeta; Akira	Funabashi			JP
Yasuda; Satoshi	Tokyo			JP
Kakumi; Yoshiyuki	Tuchiura			JP

US-CL-CURRENT: 399/109

Full	Title	Extraction	Front	Review	Classification	Date	Reference	Claims	K10C	Drawings
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Term	Documents
CONVERSION	1005534
CONVERSIONS	59458
MODIFICATION	990018
MODIFICATIONS	2499660
OF	756632
OFS	3244
TONER	218085
TONERS	28788
CARTRIDGE	257397
CARTRIDGES	81983
DIFFERENT	4796035
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L78: Entry 1 of 5

File: PGPB

Jun 23, 2005

DOCUMENT-IDENTIFIER: US 20050135836 A1

TITLE: Methods for printer cartridge conversion

Abstract Paragraph:

Techniques are provided for modifying a printer cartridge intended to operate in one type of printer to operate in another type of printer. In one aspect, a method of modifying a toner cartridge intended for operation in a first type of printer to operate in a second type of printer includes removing at least a portion of an old laser shutter fin attached to the toner cartridge at a first location, and attaching a new laser shutter fin to the toner cartridge at a second location, with second location differing from the first location. The old laser shutter fin was positioned to engage a laser shutter of the first type of printer, and the new laser shutter is positioned to engage a laser shutter of the second type of printer. In another aspect, the method may include attaching a chip mounting patch to the toner cartridge, and attaching a computer chip to the chip mounting patch, with the computer chip being compatible with the second type of printer. In another aspect, the method includes replacing a first type of transfer gear of the toner cartridge with a second type of transfer gear, with first type of transfer gear for operation with the first type of printer and said second type of transfer gear for operation.

Current US Classification, US Primary Class/Subclass:399/109Summary of Invention Paragraph:

[0007] In one aspect of the present invention, a method of modifying a toner cartridge intended for operation in a first type of printer to operate in a second type of printer includes removing at least a portion of an old laser shutter fin attached to the toner cartridge at a first location, and attaching a new laser shutter fin to the toner cartridge at a second location, with second location differing from the first location. The old laser shutter fin was positioned to engage a laser shutter of the first type of printer, and the new laser shutter is positioned to engage a laser shutter of the second type of printer.

CLAIMS:

1. A method of modifying a toner cartridge intended for operation in a first type of printer to operate in a second type of printer, the method comprising: removing at least a portion of a laser shutter fin attached to the toner cartridge at a first location; and attaching a new laser shutter fin to the toner cartridge at a second location, said second location differing from the first location.

9. A method of modifying a toner cartridge adapted for operation in a first type of printer to operate in a second type of printer, said toner cartridge comprising a laser shutter fin located in a first location to engage a laser shutter of the first type of printer, said toner cartridge not comprising an electronic chip, the method comprising: removing at least a portion of the laser shutter fin attached to the toner cartridge at the first location; attaching a new laser shutter fin to the toner cartridge at a second location, said second location differing from the first location; attaching a chip mounting patch to the toner cartridge; and attaching an

electronic chip to the chip mounting patch.

[Previous Doc](#)

[Next Doc](#)

[Go to Doc#](#)

[First Hit](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)[Generate Collection](#)[Print](#)

L78: Entry 3 of 5

File: PGPB

Nov 15, 2001

DOCUMENT-IDENTIFIER: US 20010041080 A1

TITLE: Remanufacturing method of process cartridge

Abstract Paragraph:

A remanufacturing method for a process cartridge which is detachably mountable to a main assembly of an electrophotographic image forming apparatus, wherein the process cartridge includes a first unit supporting an electrophotographic photosensitive drum and a second unit, which includes a developing frame supporting a developing roller, a developer accommodating portion for accommodating a developer to be used for development by the developing roller and a developer frame provided with a developer supply opening for supplying to the developing roller the developer accommodated in the developer accommodating portion, the first unit and second unit being rotatably coupled with each other, the method includes (a) a unit separating step of separating the first unit and the second unit from each other; (b) a developing roller dismounting step of dismounting the developing roller mounted to the second unit which has been separated by the separation step; an addition seal mounting step of mounting an addition seal along an original seal having been mounted to the developing frame along a longitudinal direction of the developing roller frame to prevent leakage of the developer through between the developing roller and the developing roller frame; (d) a developer refilling step of refilling the developer into the developer accommodating portion of the second unit which has been separated by the separation step; (e) a developing roller remounting step of remounting the developing roller to the second unit which has been separated by the separation step; and (f) a unit re-coupling step of recoupling the first unit and the second unit with each other, by which the process cartridge is remanufactured without remounting the toner seal to the developer supply opening having been unsealed by removing a toner seal upon start of used of the process cartridge.

Current US Classification, US Secondary Class/Subclass:

399/109

Detail Description Paragraph:

[0089] The process cartridge B is provided with the drum shutter 18 (FIG. 16) which exposes or covers the transfer opening 13n by being moved by the movement of the process cartridge B during the mounting or dismounting of the process cartridge B, respectively. The drum shutter 18 is structured so that when the process cartridge B is out of the apparatus main assembly 14, the drum shutter 18 remains closed to protect the image transfer area of the photosensitive drum 7. Referring to FIG. 6, the drum shutter 18 is attached to the end portion of an arm 18a, and the end portion of a linking member 18b, and the arm 18a and linking member 18b are rotationally supported by the cleaning means holding frame portion 13. The arm 18a, linking member 18b, drum shutter 18, and cleaning means holding frame portion 13 constitute together a quadri-joint mechanism. The drum shutter 18 opens as the process cartridge B is inserted further into the apparatus main assembly 14, in the downward direction (direction in which lid 35 is closed), in FIG. 5, after the lever 23, the base portion of which is fixed to the supporting point 18c at which the arm 18a is supported by the cleaning means holding frame portion 13, comes into contact with a stationary stopper (unillustrated) with which the apparatus main assembly 14 is provided. The drum shutter 18 is closed by the resiliency of a

torsional coil spring 23a, as the process cartridge B is taken out of the apparatus main assembly 14. The torsional coil spring 23a is anchored to the supporting point 18c to keep the shutter arm 18a pressed in the clockwise direction (direction in which shutter 18 is closed).

[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

[First Hit](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)[Generate Collection](#)[Print](#)

L78: Entry 4 of 5

File: PGPB

Nov 1, 2001

DOCUMENT-IDENTIFIER: US 20010036373 A1

TITLE: Remanufacturing method of process cartridge

Abstract Paragraph:

A remanufacturing method for a process cartridge which is detachably mountable to a main assembly of an electrophotographic image forming apparatus, wherein the process cartridge includes a first unit supporting an electrophotographic photosensitive drum and a second unit, which includes a developing frame supporting a developing roller, a developer accommodating portion for accommodating a developer to be used for development by the developing roller and a developer frame provided with a developer supply opening for supplying to the developing roller the developer accommodated in the developer accommodating portion, the first unit and second unit being rotatably coupled with each other, the method includes (a) a unit separating step of separating the first unit and the second unit from each other; (b) a developing roller dismounting step of dismounting the developing roller mounted to the second unit which has been separated by the separation step; (c) a sealing step of sealing with a sealant a connecting portion between the developer frame and the developing frame at one longitudinal ends of the frames; (d) a developer refilling step of refilling the developer into the developer accommodating portion of the second unit which has been separated by the separation step; (e) a developing roller remounting step of remounting the developing roller to the second unit which has been separated by the separation step; and (f) a unit re-coupling step of recoupling the first unit and the second unit with each other, by which the process cartridge is remanufactured without remounting the toner seal to the developer supply opening having been unsealed by removing a toner seal upon start of used of the process cartridge.

Current US Classification, US Primary Class/Subclass:

399/109

Detail Description Paragraph:

[0089] The process cartridge B is provided with the drum shutter 18 (FIG. 16) which exposes or covers the transfer opening 13n by being moved by the movement of the process cartridge B during the mounting or dismounting of the process cartridge B, respectively. The drum shutter 18 is structured so that when the process cartridge B is out of the apparatus main assembly 14, the drum shutter 18 remains closed to protect the image transfer area of the photosensitive drum 7. Referring to FIG. 6, the drum shutter 18 is attached to the end portion of an arm 18a, and the end portion of a linking member 18b, and the arm 18a and linking member 18b are rotationally supported by the cleaning means holding frame portion 13. The arm 18a, linking member 18b, drum shutter 18, and cleaning means holding frame portion 13 constitute together a quadri-joint mechanism. The drum shutter 18 opens as the process cartridge B is inserted further into the apparatus main assembly 14, in the downward direction (direction in which lid 35 is closed), in FIG. 5, after the lever 23, the base portion of which is fixed to the supporting point 18c at which the arm 18a is supported by the cleaning means holding frame portion 13, comes into contact with a stationary stopper (unillustrated) with which the apparatus main assembly 14 is provided. The drum shutter 18 is closed by the resiliency of a torsional coil spring 23a, as the process cartridge B is taken out of the apparatus main assembly 14. The torsional coil spring 23a is anchored to the supporting point

18c to keep the shutter arm 18a pressed in the clockwise direction (direction in which shutter 18 is closed).

[Previous Doc](#)

[Next Doc](#)

[Go to Doc#](#)

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L78: Entry 5 of 5

File: USPT

Jun 10, 2003

DOCUMENT-IDENTIFIER: US 6577829 B2

** See image for Certificate of Correction **

TITLE: REMANUFACTURING METHOD FOR A PROCESS CARTRIDGE HAVING A TONER SEAL THAT IS UNSEALED UPON THE START OF USE OF THE CARTRIDGE COMPRISING THE STEPS OF SEPARATING FIRST AND SECOND UNITS OF THE CARTRIDGE AND RECOUPLING THE UNITS WITHOUT REMOUNTING THE TONER SEAL

Brief Summary Text (14):

According to an aspect of the present invention, there is provided a remanufacturing method for a process cartridge which is detachably mountable to a main assembly of an electrophotographic image forming apparatus, wherein the process cartridge includes a first unit supporting an electrophotographic photosensitive drum and a second unit, which includes a developing frame supporting a developing roller, a developer accommodating portion for accommodating a developer to be used for development by the developing roller and a developer frame provided with a developer supply opening for supplying to the developing roller the developer accommodated in the developer accommodating portion, the first unit and second unit being rotatably coupled with each other, the method comprising: (a) a unit separating step of separating the first unit and the second unit from each other; (b) a developing roller dismounting step of dismounting the developing roller mounted to the second unit which has been separated by the separation step; (c) a sealing step of sealing with a sealant a connecting portion between the developer frame and the developing frame at one longitudinal end of the frames; (d) a developer refilling step of refilling the developer into the developer accommodating portion of the second unit which has been separated by the separation step; (e) a developing roller remounting step of remounting the developing roller to the second unit which has been separated by the separation step; and (f) a unit re-coupling step of re-coupling the first unit and the second unit with each other, by which the process cartridge is remanufactured without remounting the toner seal to the developer supply opening having been unsealed by removing a toner seal upon the start of use of the process cartridge.

Detailed Description Text (33):

The process cartridge B is provided with the drum shutter 18 (FIG. 16) which exposes or covers the transfer opening 13n by being moved by the movement of the process cartridge B during the mounting or dismounting of the process cartridge B, respectively. The drum shutter 18 is structured so that when the process cartridge B is out of the apparatus main assembly 14, the drum shutter 18 remains closed to protect the image transfer area of the photosensitive drum 7. Referring to FIG. 6, the drum shutter 18 is attached to the end portion of an arm 18a, and the end portion of a linking member 18b, and the arm 18a and linking member 18b are rotationally supported by the cleaning means holding frame portion 13. The arm 18a, the linking member 18b, the drum shutter 18, and the cleaning means holding frame portion 13 constitute together a quadri-joint mechanism. The drum shutter 18 opens as the process cartridge B is inserted further into the apparatus main assembly 14, in the downward direction (direction in which lid 35 is closed), in FIG. 5, after the lever 23, the base portion of which is fixed to the supporting point 18c at which the arm 18a is supported by the cleaning means holding frame portion 13,

comes into contact with a stationary stopper (unillustrated) with which the apparatus main assembly 14 is provided. The drum shutter 18 is closed by the resiliency of a torsional coil spring 23a, as the process cartridge B is taken out of the apparatus main assembly 14. The torsional coil spring 23a is anchored to the supporting point 18c to keep the shutter arm 18a pressed in the clockwise direction (direction in which shutter 18 is closed).

Current US Original Classification (1):

399/109

[Previous Doc](#)

[Next Doc](#)

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1. Document ID: US 20040170445 A1

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L81: Entry 1 of 4

File: PGPB

Sep 2, 2004

PGPUB-DOCUMENT-NUMBER: 20040170445

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040170445 A1

TITLE: Systems and methods for toner cartridge conversion

PUBLICATION-DATE: September 2, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Moore, Darin L.	Morrisville	NC	US
Daniels, Matthew P.	Pittsboro	NC	US

US-CL-CURRENT: 399/109

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [References](#) [Sequences](#) [Attachments](#) [Claims](#) [KIMI](#) [Drawings](#)

2. Document ID: US 20010041080 A1

L81: Entry 2 of 4

File: PGPB

Nov 15, 2001

PGPUB-DOCUMENT-NUMBER: 20010041080

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010041080 A1

TITLE: Remanufacturing method of process cartridge

PUBLICATION-DATE: November 15, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Higeta, Akira	Funabashi-shi		JP
Yasuda, Satoshi	Tokyo		JP
Kakumi, Yoshiyuki	Tuchiura-shi		JP

US-CL-CURRENT: 399/103; 399/109, 399/113

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	HTML	Drawings
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3. Document ID: US 20010036373 A1

L81: Entry 3 of 4

File: PGPB

Nov 1, 2001

PGPUB-DOCUMENT-NUMBER: 20010036373

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010036373 A1

TITLE: Remanufacturing method of process cartridge

PUBLICATION-DATE: November 1, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Higeta, Akira	Funabashi-shi		JP
Yasuda, Satoshi	Tokyo		JP
Kakumi, Yoshiyuki	Tuchiura-shi		JP

US-CL-CURRENT: 399/109; 399/103

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	HTML	Drawings
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4. Document ID: US 6577829 B2

L81: Entry 4 of 4

File: USPT

Jun 10, 2003

US-PAT-NO: 6577829

DOCUMENT-IDENTIFIER: US 6577829 B2

** See image for Certificate of Correction **

TITLE: REMANUFACTURING METHOD FOR A PROCESS CARTRIDGE HAVING A TONER SEAL THAT IS UNSEALED UPON THE START OF USE OF THE CARTRIDGE COMPRISING THE STEPS OF SEPARATING FIRST AND SECOND UNITS OF THE CARTRIDGE AND RECOUPLING THE UNITS WITHOUT REMOUNTING THE TONER SEAL

DATE-ISSUED: June 10, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Higeta; Akira	Funabashi			JP
Yasuda; Satoshi	Tokyo			JP
Kakumi; Yoshiyuki	Tuchiura			JP

US-CL-CURRENT: 399/109

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	HTML	Drawings
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Term	Documents
DRUM	574226
DRUMS	113036
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SHUTTERS	38114
COVER\$4	0
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COVERA	1291
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COVERAAE	49
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Search Results - Record(s) 1 through 1 of 1 returned.

1. Document ID: US 20040170445 A1

Using default format because multiple data bases are involved.

L83: Entry 1 of 1

File: PGPB

Sep 2, 2004

PGPUB-DOCUMENT-NUMBER: 20040170445

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040170445 A1

TITLE: Systems and methods for toner cartridge conversion

PUBLICATION-DATE: September 2, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Moore, Darin L.	Morrisville	NC	US
Daniels, Matthew P.	Pittsboro	NC	US

US-CL-CURRENT: 399/109
[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KIMC](#) | [Print](#) |

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[Generate Collection](#)
[Print](#)
[Fwd Refs](#)
[Bkwd Refs](#)
[Generate OACS](#)

Term	Documents
DRUM	574226
DRUMS	113036
SHUTTER	194313
SHUTTERS	38114
WASTE	683256
WASTES	68039
USED	10015691
USEDS	42
OLD	350106
OLDS	12071
USED-UP	949

(L79 AND ((DRUM) WITH (COVER\$4 OR SHUTTER OR SHIELD\$3) WITH ((WASTE OR ((USED OR OLD OR USED-UP OR EMPTY) WITH TONER) OR TRASH OR RUBBISH) WITH (BIN OR RECEPTACLE OR CONTAIN\$4 OR COLLECTION OR COLLECT\$3 OR DEVICE)))).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.

1

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Search Results - Record(s) 1 through 2 of 2 returned.

1. Document ID: US 20040170445 A1

Using default format because multiple data bases are involved.

L84: Entry 1 of 2

File: PGPB

Sep 2, 2004

PGPUB-DOCUMENT-NUMBER: 20040170445

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040170445 A1

TITLE: Systems and methods for toner cartridge conversion

PUBLICATION-DATE: September 2, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Moore, Darin L.	Morrisville	NC	US
Daniels, Matthew P.	Pittsboro	NC	US

US-CL-CURRENT: 399/109

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#) [Claims](#) [KUIC](#) [Drawings](#)

2. Document ID: US 6505020 B1

L84: Entry 2 of 2

File: USPT

Jan 7, 2003

US-PAT-NO: 6505020

DOCUMENT-IDENTIFIER: US 6505020 B1

** See image for Certificate of Correction **

TITLE: Remanufacturing method of process cartridge

DATE-ISSUED: January 7, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Higeta; Akira	Funabashi			JP
Kakumi; Yoshiyuki	Tuchiura			JP

US-CL-CURRENT: 399/109; 399/103, 399/111

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#) [Claims](#) [KUIC](#) [Drawings](#)

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Term	Documents
DRUM	574226
DRUMS	113036
SHUTTER	194313
SHUTTERS	38114
WASTE	683256
WASTES	68039
USED	10015691
USED\$	42
OLD	350106
OLDS	12071
USED-UP	949
(L72 AND ((DRUM) WITH (COVER\$4 OR SHUTTER OR SHIELD\$3) WITH ((WASTE OR ((USED OR OLD OR USED-UP OR EMPTY) WITH TONER) OR TRASH OR RUBBISH) WITH (BIN OR RECEPTACLE OR CONTAINS\$4 OR COLLECTION OR COLLECT\$3 OR DEVICE)))).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	2

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[Previous Page](#)[Next Page](#)[Go to Doc#](#)

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L84: Entry 2 of 2

File: USPT

Jan 7, 2003

DOCUMENT-IDENTIFIER: US 6505020 B1

** See image for Certificate of Correction **

TITLE: Remanufacturing method of process cartridge

Brief Summary Text (13):

According to another aspect of the present invention, there is provided a remanufacturing method of remanufacturing a process cartridge comprising: (a) a step of preparing a used process cartridge which comprises a toner developing container, a cleaning container and pins for coupling the toner developing container and the cleaning container at opposite longitudinal ends of the process cartridge, the toner developing container including a toner accommodating portion, a toner supply opening, a developing roller and a developing blade; the cleaning container including an electrophotographic photosensitive drum; (b) a container separating step of separating the process cartridge into the toner developing container and the cleaning container by disengaging the pins from the process cartridge; (c) a developing roller dismounting step of dismounting the developing roller from the toner developing container separated by the container separating step; (d) a developing blade dismounting step of dismounting the developing blade from the toner developing container separated by the container separating step; (e) a sealing material filling step of filling a sealing material into a gap formed in the toner developing container extending longitudinally inside of an end seal provided at each of longitudinally opposite ends thereof; (f) a sealing material applying step of applying a sealing material to cover a portion of a sealing member exposed from the toner developing container, the sealing member being the provided at each of the opposite longitudinal ends at a position remote from the developing roller; (g) a developing blade mounting step of mounting the developing blade on the toner developer container having the sealing material; (h) a developing roller mounting step of mounting the developing roller on the toner developer container having the sealing material; (i) a toner refilling step of refilling the toner into the toner accommodating portion of the toner developing container having the sealing material, the developing blade and the developing roller; and (j) a container coupling step of coupling the toner developing container having the sealing material, the developing blade and the developing roller with the cleaning container by engaging the pins into them.

Detailed Description Text (308):

2. A remanufacturing method of remanufacturing a process cartridge B comprising: (a) a step of preparing a used process cartridge B which comprises a toner developing container 12, a cleaning container 13 and pins for coupling the toner developing container 12 and the cleaning container 13 at opposite longitudinal ends of the process cartridge B, the toner developing container 12 including a toner accommodating portion 10a, a toner supply opening 12a1, a developing roller 10d and a developing blade 10e; the cleaning container 13 including an electrophotographic photosensitive drum 7; (b) a container separating step of separating the process cartridge B into the toner developing container 12 and the cleaning container by disengaging the pins from the process cartridge B; (c) a developing roller 10d dismounting step of dismounting the developing roller 10d from the toner developing container 12 separated by the container separating step; (d) a developing blade 10e

dismounting step of dismounting the developing blade 10e from the toner developing container 12 separated by the container separating step; (e) a sealing material 64 filling step of filling a sealing material 64 into a gap formed in the toner developing container 12 extending longitudinally inside of an end seal 34 provided at each of longitudinally opposite ends thereof; (f) a sealing material 64 applying step of applying a sealing material 64 to cover a portion of a sealing member exposed from the toner developing container 12, the sealing member being the provided at each of the opposite longitudinal ends at a position remote from the developing roller 10d; (g) a developing blade 10e mounting step of mounting the developing blade 10e on the toner developer container having the sealing material 64; (h) a developing roller 10d mounting step of mounting the developing roller 10d on the toner developer container having the sealing material 64; (i) a toner refilling step of refilling the toner into the toner accommodating portion 10a of the toner developing container 12 having the sealing material 64, the developing blade 10e and the developing roller 10d; and (j) a container coupling step of coupling the toner developing container 12 having the sealing material 64, the developing blade 10e and the developing roller 10d with the cleaning container 13 by engaging the pin 41 into them.

Current US Original Classification (1):

399/109

[Previous Doc](#)

[Next Doc](#)

[Go to Doc#](#)